इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”
Mazdoor Kisan Shakti Sangathan
“The Right to Information, The Right to Live”

“पुराने को छोड नये के तरफ”
Jawaharlal Nehru
“Step Out From the Old to the New”

IS 13052 (1991): Internal Combustion Engines - Cylinder Liners - Quality Characteristics [TED 2: Automotive Primemovers]

“ज्ञान से एक नये भारत का निर्माण”
Satyanarayan Gangaram Pitroda
“Invent a New India Using Knowledge”

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

Made Available By
Public.Resource.Org

“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”
Bhartṛhari—Nītiśatakam
“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE

BRUTUM FULMEN

IGNORANTIA JURIS NON EXCUSAT

PROTECTED BY COPYRIGHT

भारतीय मानक

अंतर्दाही इंजन – सिलिंडर अस्तर – गुणता लक्षण

Indian Standard

INTERNAL COMBUSTION ENGINES — CYLINDER LINERS — QUALITY CHARACTERISTICS

UDC 621·43-222·1 : 658·562

© BIS 1991

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

June 1991

Price Group 2

Automotive Primemovers Sectional Committee, TED 2

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards on 18 May 1990, after the draft finalized by the Automotive Primemovers Sectional Committee had been approved by Transport Engineering Division Council.

This Indian Standard is an important adjunct to IS 6750 : 1985 'Specification for cylinder liners for internal combustion engines (*first revision*)'. It aims to remove any ambiguities that may arise in interpretation of results, terminologies and the. methods of assessing the quality characteristics of cylinder liners used in internal combustion engines.

Indian Standard

INTERNAL COMBUSTION ENGINES — CYLINDER LINERS — QUALITY CHARACTERISTICS

1 SCOPE

1.1 This standard covers the quality characteristics applicable for cylinder liners used in internal combustion engines conforming to IS 6750 : 1985 Specification for cylinder liners for internal combustion engines (*first revision*)', their terminology and the methods for assessing the quality characteristics.

2 REFERENCES

2.1 The following Indian standard has been referred in this standard:

IS No.	*Title*
3073 : 1967	Assessment of surface roughness

3 TERMS, DEFINITIONS AND MEASURING PROCEDURES

3.1 Bore Diameter ($\phi\, d_1$)

Bore diameter is the average inside diameter of the liner. It is measured by a dial bore gauge or liquid-column air gauge or an electronic comparator.

3.1.1 *Taper (Bore)*

Taper is the difference between maximum and minimum bore diameter along the longitudinal direction (*see* Fig. 1). It is measured by using a dial gauge, liquid-column air gauge or an electronic comparator.

3.1.2 *Ovality (Bore)*

Ovality of the bore is the difference between maximum and minimum diameters measured in plane across the liners and measured by rotating the liner through 360° (*see* Fig. 2). The measurement is done by using a dial gauge, liquid-column air gauge or an electronic comparator.

3.1.3 *Outside Diameter (OD)*

The diameters of body and flange measured by the liquid-column air gauge or a 'C' gauge with dial indicator or an electronic comparator (*see* Fig. 3).

3.1.4 *Taper (Outer Diameter)*

Taper measured on the OD is the difference between the maximum and minimum diameters measured along the longitudinal direction of the liner. It is measured by a dial gauge or liquid-column air gauge or an electronic comparator (*see* Fig. 4).

3.1.5 *Ovality (Outer Diameter)*

The ovality with respect to OD is the difference between the maximum and minimum outer diameters measured across the diameters as illustrated in Fig. 5 and measured by a dial or liquid-column air gauge or an electronic comparator. The liner is rotated through 360° during measurements (*see* Fig. 5).

3.1.6 *Concentricity*

It is the maximum variation in wall thickness around the complete circumference and indicated as Total Indicator Reading (TIR). It is measured with 'V' block and dial gauge. The liner is rotated through 360° on four steel balls located in the bore (*see* Fig. 6).

3.1.7 *Flange Squareness*

It is the maximum variation of the underside of the flange over the full circumference with respect to outside diameter of the liner. The measurement shall be done by a 'V' block and dial gauge. The flange is butted against a stopper and liner rotated through 360° and the total indicator readings taken. The value obtained is twice the actual amount of out of squareness (*see* Fig. 7).

3.1.8 *Surface Roughness*

The surface roughness of the liner shall be measured in accordance with IS 3073 : 1967.

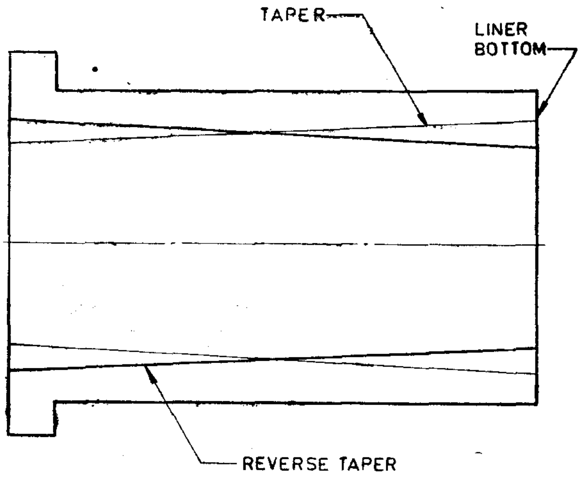

FIG. 1 TAPER

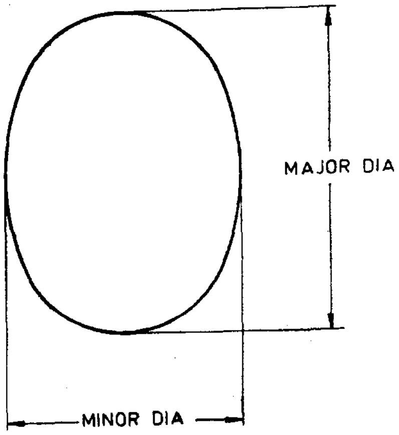

FIG. 2 OVALITY (BORE)

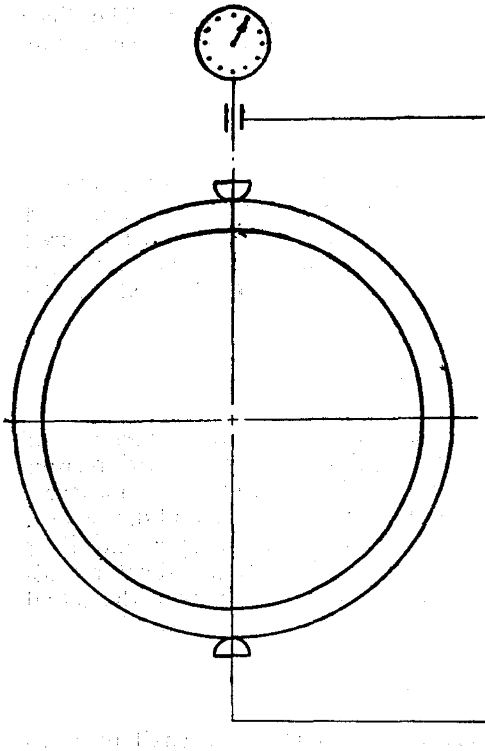

FIG. 3 OUTSIDE DIAMETER

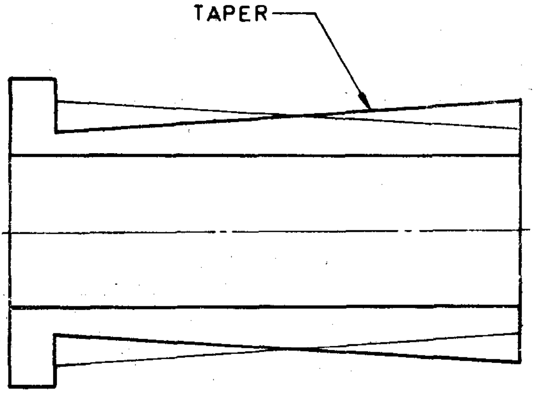

FIG. 4 TAPER (OUTSIDE DIAMETER)

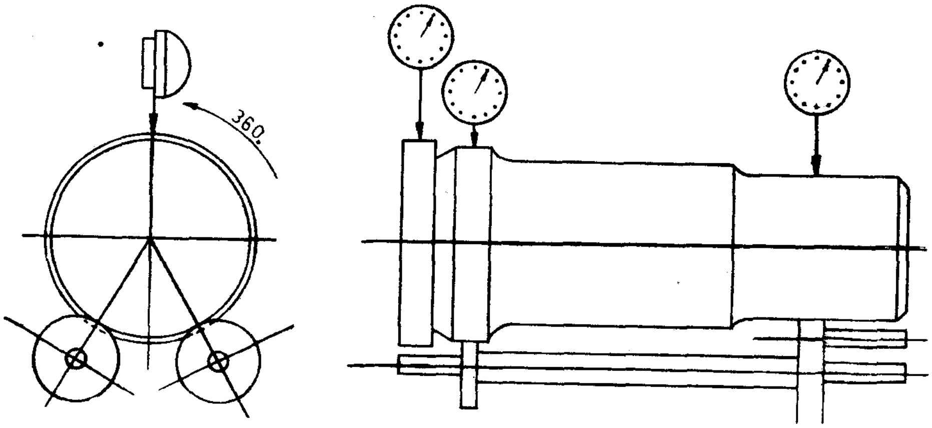

FIG. 5 OVALITY (OUTER DIAMETER)

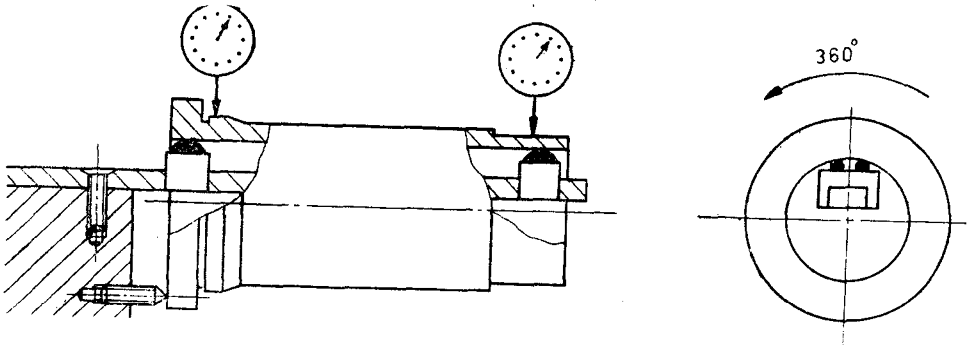

FIG. 6 CONCENTRICITY

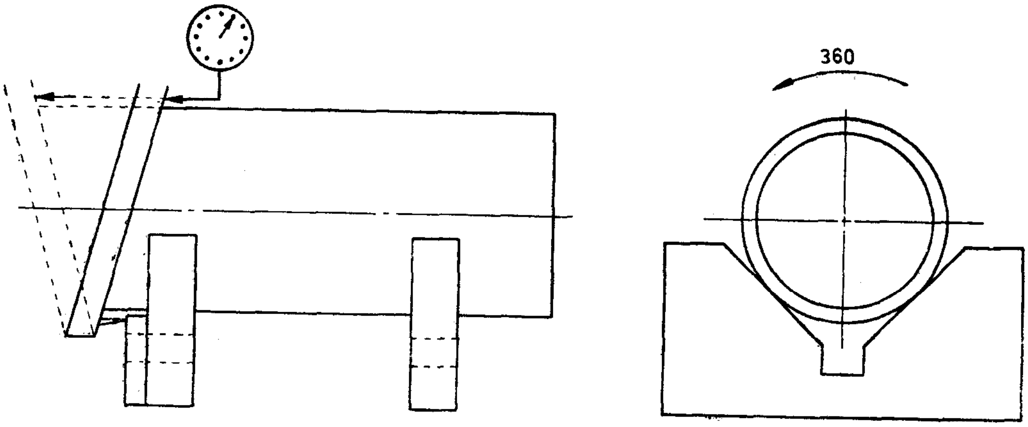

FIG. 7 FLANGE SQUARENESS

Standard Mark

The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act, 1986* to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Revision of Indian Standards

Indian Standards are reviewed periodically and revised, when necessary and amendments, if any, are issued from time to time. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition. Comments on this Indian Standard may be sent to BIS giving the following reference:

Doc : No. TED 2 (4890)

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones : 331 01 31, 331 13 75
Telegrams : Manaksanstha
(Common to all Offices)

Regional Offices:

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg
NEW DELHI 110002 — 331 01 31, 331 13 75

Eastern : 1/14 C.I.T. Scheme VII M, V.I.P. Road, Maniktola
CALCUTTA 700054 — 37 86 62

Northern : SCO 445-446, Sector 35-C, CHANDIGARH 160036 — 53 38 43

Southern : C.I.T. Campus, IV Cross Road, MADRAS 600113 — 2 35 02 16

Western : Manakalaya, E9 MIDC, Marol, Andheri (East)
BOMBAY 400093 — 6 32 92 95

Branches : AHMADABAD. BANGALORE. BHOPAL. BHUBANESHWAR. COIMBATORE. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. KANPUR. PATNA. THIRUVANANTHAPURAM.

Printed at Progressive Printers, Shahdara, Delhi, India